

10. (Canceled.)

11. (Canceled.)

12. (Canceled.)

13. (Canceled.)

1 14. (Original.) A circuit to control and monitor voltage potential on a human body
2 comprising:
3 an electrode in contact with skin of an operator, a ground fault sensing / relay /
4 current limit stage, and a current-to-voltage converter in a path-to-ground,
5 a filter,
6 an absolute value amplifier,
7 display means,
8 a window detector,
9 a ground fault bistable multivibrator,
10 an astable multivibrator,
11 an activity detector means, and
12 an alarm means; wherein
13 triboelectric current bursts detected by said electrode enter said ground fault sensing
14 / relay / current limit stage, a signal from said ground fault sensing / relay / current limit
15 stage being processed through said current-to-voltage converter, said filter, and said
16 absolute value amplifier, said absolute value amplifier converting bipolar signals into
17 positive unipolar signals, said unipolar signals driving said display means; and wherein
18 a first signal is picked off from said display means to drive said activity detector

19 means, and concurrently, a second signal is picked off from said ground fault sensing /
20 relay / current limit stage, said second signal being processed through said window
21 detector and through said ground fault bistable multivibrator, outputs of said activity
22 detector means and said ground fault bistable multivibrator drive multivibrators which in
23 turn drive said alarm means; such that
24 said alarm means is activated when said circuit does not detect said triboelectric
25 current bursts and when inadvertent contact with a power source occurs.

1 15. (Original.) The circuit as claimed in claim 14 wherein:

2 an output signal of said ground fault bistable multivibrator causes a relay to open if
3 the operator accidentally contacts a live power wire.

1 16. (Original.) The circuit as claimed in claim 14 wherein:

2 an output signal of said ground fault bistable multivibrator ensures blanking of said
3 display means unless said ground fault bistable multivibrator has been manually reset.

1 17. (Original.) The circuit as claimed in claim 14 wherein:

2 a power-on fail safe means insures that said ground fault bistable multivibrator is set
3 to a proper logical state after any interruption in power supply.

1 18. (Original.) The circuit as claimed in claim 14 wherein:

2 functions of said absolute value amplifier, said ground fault bistable multivibrator, said

3 astable multivibrator, and said activity detector means are executed by a microprocessor.

1 19. (Original.) The circuit as claimed in claim 14 wherein:

2 said circuit comprises two electrodes in contact with the skin of the operator, said two
3 electrodes being electrically isolated, and each of said two electrodes being an element of
4 an independent path-to-ground; wherein

5 said alarm means is activated if a difference between a current flowing through a first
6 one of said paths-to-ground and a current flowing through a second one of said paths-to-
7 ground is greater than a predetermined level, said difference indicating a compromise in
8 at least one of said paths-to-ground.

1 20. (Original.) The circuit as claimed in claim 14 wherein:

2 said circuit comprises two electrodes in contact with the skin of the operator, said two
3 electrodes being electrically isolated, and each of said two electrodes being an element of
4 an independent path-to-ground; wherein

5 said alarm means is activated if a voltage potential detected in either of said paths-to-
6 ground is greater than a predetermined level, said voltage potential indicating a
7 compromise in at least one of said paths-to-ground.